AGILE AND SCRUM TECHNOLOGICAL PRACTICES

AMONG MILLENNIAL GENERATION

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ABSTRACT

Since technology has been changing rapidly over the years, adaption should be the major role; especially current millennials need to encounter for organizational survival, whichever platforms and methodological practices they are using. Millennials will see technology as natural, cementing the shift away from the traditional PC that the Baby Boomers initiated. Millennials are disrupting traditional business models. Everyday processes must be updated to accommodate new generations of talent. They work differently and have different expectations. This paper reveals and brings significant attention to cope up with current business solutions in the existing business environment. Apart from that, both agile and scrum methodological practices follows some challenges among millennials that lead to less usability. This paper intends to identify these challenges and proposes methods to improve the usability of agility in enterprise architecture.

KEYWORDS: Scrum and Agile, Innovations, Process Teams & Culture

INTRODUCTION

By 1980, both agile and scrum developed meeting the challenges of current millennials (born between 1980 and 2000) to build their professional organization. The current generation want autonomous, looking for creativity, requires collaboration through shared mission and values, and also they need larger context what they are doing and working by rejecting outdated standards, bureaucratic processes and antiquated tools. They are motivated by mastery and autonomy, with easy access to state-of-the-art-technology. With a shift to the agile philosophy, projects have new goals that go beyond the traditional triple constraints of time, cost and scope.

The recent developments of agile and scrum are millennials that are more digital natives having grown up in the age of computers. Technology had been hard-wired into their brains and bodies to the extent currently possible. Millennial Developers are hungry for new information and have an intrinsic desire to learn new technical skills. Everybody in today's environment, especially young professionals across the world devoted towards social sharing economy. All are opting for shared vehicles and vacation rentals, which help to translate their desire to share knowledge with others through crowdsource information and education.

Millennial generation recently craving their knowledge and experience in workplace with their skill sets with continuous well-rounded education, but they are craving to apply their knowledge and experiences in the workplace. Each millennial driven company develops projects through collaboration and integration with less process and development process time. They work round the clock with bottlenecks, and develop innovative products more frequently across competitive technology vendors. Scrum and agile encourage millennials to stay

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because, the methodologies focus on growth and adaptability.

Exponential growth is essential to the technology industry, and technology companies know their way around processes that enable and support it. But for slow traditional companies, it sometimes appears to be some kind of magic tool. Software Development methodologies are perceived in traditional industries as hacks, so the number of managers who want to try them increases every day. By growing technological developments, number of complex software arises, because this demand and requirements are more difficult to understand and implement.

With the help of agile of scrum, methodologies developers and engineers have more flexibility and freedom by suggesting their best solutions in most efficient and effective ways, to achieve performance based outcomes. In agile and scrum, the focus is on the outcome of a project and the "why" of solving a business problem, not on "how" it's done, which was a major problem with the traditional waterfall method of development. Professional development is very important to this generation, both agile and scrum focus on iteration and constant adaptation is a perfect fit. Scrum and agile encourage people to stay because the methodologies focus on growth and adaptability.

Purpose of this Study

The study analyzes how millennials are becoming the dominant demographic in the workplace, especially in project development practices. Scrum, which is a part of agile development help millennials have high opinions of their own capabilities and **high expectations of their employers**. They want **direct input, creative challenges, immediate feedback and instant autonomy**. Many Smart companies are adapting to this workforce shift.

Objectives of the Study

- To encourage millennial scrum practitioners for emphasizing on scrum technology implementation practices

- To help millennial research community in the process to analyze challenges in scrum adoption

- To come up with the effective solutions to alleviate general and technical challenges faced by millennials during scrum process.

Millennial Culture

According to Forbes, on an average millennials will stay in a position for 2 years, as compared to Gen X, who are reported to have a tenure of 5-7 years at a workplace. Studies show that what millennials want, even more than a higher paycheck, is to feel fulfilled. They want to be empowered to do great work, and to feel like what they're doing on a day-to-day basis is actually making an impact. Millennials seek autonomy, mastery, and purpose. Agile and scrum allows IT organizations and software companies to build a great professional environment around iteration, autonomy, mastery and purpose. Developers—and employees in general—crave some level of autonomy, an opportunity to flex their skills without micromanagement from supervisors. Since agile offers self-directed teams working toward achieving organizational goals, it seems to play nicely with the millennial ideology. Enforcing a Gen X and Baby Boomer culture may result in millennials seeking other opportunities, as this atmosphere does not align with their values or aspirations.

Millennials, however are more interested in the "why" of their work, hoping to work *with* the business toward success as opposed to merely in the business. Scrum and agile encourage people to stay because the methodologies focus on growth and adaptability. Millennials are naturally more Agile. It requires today's companies to look for ways to provide leadership and management that millennials can understand, relate to and grow from.

LITERATURE REVIEW

Laanti et al (2011) made a study on organization wide agile adoption practices at Nokia, where the author determined his results that most of the respondents agreed with the benefits of agile usage, with utmost higher satisfaction and effectiveness, and also examined that agile increases their quality and transparency, by detection of faults 60% of the respondents preferred to stay with the agile methodological practices which return to their previous ways of working.

Most of the agile methodological practices currently handled and managed are especially in software development arena, where many researchers are currently investigating whether these methodologies may extend to other industries. *Conforto (2014)* in his study states that most companies have a major challenge in performing project planning and control, while developing their new products and technologies, and it is a major drive for companies, especially to deploy pure agile project management. His study also investigated how often partial agile methodological practices may bring benefits for companies over traditional project approaches.

Beck, 2000 discussed that, Agile Alliance high user involvement in building decisions promoted joint application development methodologies. Also, discussed joint application development methodology promotes key users in continuous monitoring and adapting of deliverable to derived mixed benefits.

Larman and Vodde (2010) propose a two-layer model for scaling a large-scale development organization. This model may be commercialized even for Large Scale Scrum (LeSS) framework. This model arranges feature teams and is grouped in technical product areas. As per this paper, the author defines each technical product area managed by an area product owner, who in turn reports to and managed by a product owner. Every product owner manages product backlog and assigns backlog items to product areas. Every technical feature split into smaller backlog items, which can be implemented during single sprint. Through this, dates of the external releases are planned.

SCRUM Framework

Several IT frameworks focus towards sectors, by improving the existing project management practices and methodologies. In the VUCA, world times are changing, where social media sites deliver many opportunities for millennials with rapid innovations using innovative tools, attracting larger pool of developers and also immediate software updates with better features. Using VUCA in Project Environment will give advantage to millennials by treating it as a force of change that is needed to achieve in project goals. Millennials have the technical chops and intrinsic desire to truly change the world much better. As predicted, project management is no longer sequestered to IT, and the entire business world is changing because of it, changing role of IT, talent hiring changes which is shifted from qualification based to skill based and paradigm changes, especially across the role of management.

Millennials follow "Release early, release often (**RERO**)" creed within companies which helps to highly adopted towards Agile and Scrum concepts. In Scrum (one of several Agile frameworks), level of alignment is achieved through a regular cadence of events that can help to build positive communication habits and instill collaboration into the culture of teams and organizations. Scrum's management practices are similar to those of eXtreme Programming (XP), but, unlike XP, Scrum does not prescribe specific engineering practices.

When using Scrum, every millennial has a set time frame called Sprint. Each one starts with a meeting called Spring Planning, when every millennium decides how to complete the tasks and in what priority. When using Scrum, the work is usually delivered in two-week sprints. The goals are set in the beginning of each sprint. The team meets in a daily

meeting to keep the work moving forward. Along the way there is a technical lead, or a Scrum master, who manages and helps the team.

When at the end of the sprint the work is done, it is reviewed and approved by the client. For consistency and quality of work, the team conducts a sprint review on the work and a retrospective on the process. Afterwards, they move forward with the next chunk of the backlog and the cycle repeats.
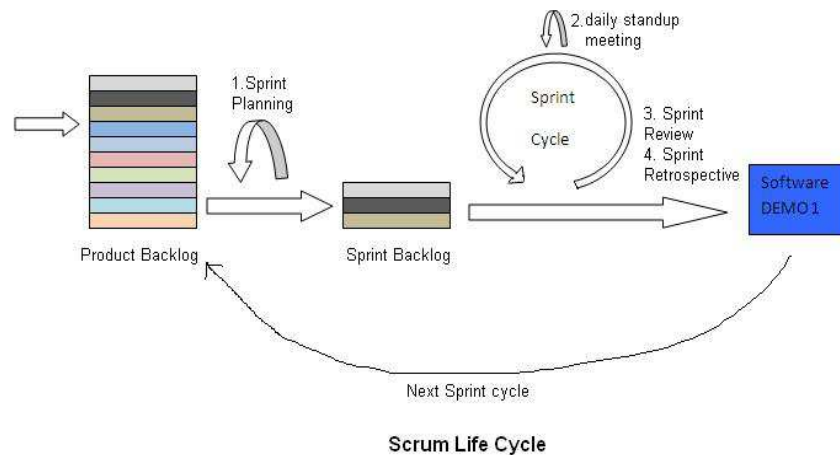

Scrum Life Cycle

Figure 1: SCRUM Life Cycle

Several industries, including service, pharmaceutical, banking and finance, marketing, finance, and construction, were beginning to adopt the Agile and Scrum development framework. And that makes sense; various research has shown that the Agile/Scrum methodology improves communication, makes millennials more adaptive to change, and has an overall higher return on investment, especially for small to midsize teams. Scrum is better able to incorporate customer feedback by delivering the product in small iterations in close collaboration with the customer. Dividing one long marathon into a series of "sprints" creates a customer-centric, agile mentality that significantly improves upon an inflexible waterfall approach.

RESEARCH METHODOLOGY

The data collection for this study was through structured questionnaire administered among millennials, who are all agile and scrum professionals working in various agile projects which consists of Scrum Master / Product Owner, Product Owners, Scrum Master, Lead Developers and Developers (Scrum team members).

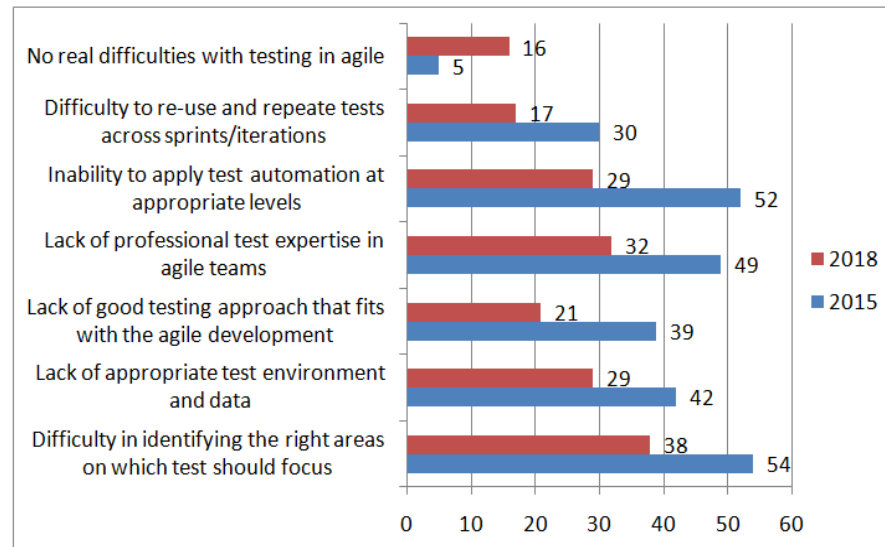## CHALLENGES IN APPLYING SCRUM TECHNOLOGY BY MILLENNIALS

Figure 2

The above chart determines, millennials are recently facing a lot of challenges in adopting towards scrum methodology practices. Millennials gained lot of experiences in using scrum process. Over the years, from 2015 to 2018, tremendous improvements were shown by millennials in accessing and managing scrum process by finding newer solutions. The above attributes shows the better improvement results.

Six statements on scrum and agile development were presented and a scale from 1 to 5 used to collect the responses: (1 = totally disagree, 3 = neutral and 5 = totally agree). The results revealed that most of the millennials respondents agreed on all accounts with the benefits and adoption of agile and scrum practices which include top management support, user friendliness, ease of compatibility increase autonomy and happiness, earlier detection of defects.

Table 1

Statements	Mean	Standard Deviation
Agile and Scrum increases the effectiveness of development	4.86	1.284
Agile and Scrum methodologies have much top management support	4.69	1.361
Agile and Scrum have much user friendliness (Much autonomy of Scrum teams)	5.12	1.381
Agile and Scrum allows teams to enable earlier detection of bugs / errors	5.02	1.329
Ease of compatibility among scrum teams	4.49	1.520

STUDY FINDINGS

- 37% of millennials—almost 4 in 10—are likely to be replaced by Agile and Scrum

- It's estimated that most Millennials have 40 to 50 years remaining in the workforce. And, since many don't have plans to retire, they'll be spending more time working.

- 35% of the workforces, millennials are tech-savvy multi-taskers who value flexibility, connectivity, and the ability to make a direct impact.

- Many millennials hold senior leadership roles in their companies that are adopting agile and scrum by making their own generations need to get a new job

- Millennials are expected to continue entering the corporate world by introducing more innovative talents on Agile and Scrum concepts with their skills sets and take up more than 75% of the workforce by 2025.

CONCLUSIONS

Agile and Scrum methods address the project success criteria even under specific environments and conditions. Scrum process is originally designed for longer projects, even when the delivery times are counted on days and hours.

Ultimately, we believe the impact of technology changes are underestimated by most. While it is natural to expect linear shifts in many areas, technology is a field where changes take place on an exponential basis. The shifts in marginal power on a global basis also go beyond asset management: as the access to faster and smarter super computers broadens, the competitive edge that some countries, sectors or segment of the population may have gained over decades may erode faster than people expect. This will have profound implications on generations to come

Agile is mainstream and that is a huge step in the right direction. Future will be created and led by millennials who are naturally more Agile. It requires today's companies to look for ways to provide leadership and management that millennials can understand, relate to and grow from.

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